UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,915	05/04/2001	Jennifer L. Hillman	PF-0247-2 CON	7120

27904 7590 10/29/2002

INCYTE GENOMICS, INC.
3160 PORTER DRIVE
PALO ALTO, CA 94304

EXAMINER
HUFF, SHEELA JITENDRA

ART UNIT	PAPER NUMBER
1642	7

DATE MAILED: 10/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/848,915	HILLMAN ET AL.	
	Examiner	Art Unit	
	Sheela J Huff	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-18 and 44-46* is/are pending in the application.

4a) Of the above claim(s) *3-6,8-14 and 44-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 15-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

The restriction requirement is revised below (this revision is the same as indicated by applicant on page 6 of the response). Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-2, 15-17, drawn to SEQ ID No. 1 and compositions and methods of use, classified in class 514, subclass 12.

II. Claims 3-6, 8 and 10-14, drawn to polynucleotides and methods of making and using said polynucleotides, classified in class 435, subclass 5+.

III. Claim 9, drawn to antibodies and methods of making and using said antibodies, classified in class 530, subclass 387.1+.

IV. Claims 18 and 45-46, drawn to methods of screening for agonists and methods of using said agonist, classified in class 435, subclass 7.1+.

V. Claims 44-46, drawn to methods of screening for antagonists and methods of using said antagonist, classified in class 435, subclass 7.1+.

Applicant's election with traverse of Group I, claims 1-2 and 15-17 (SEQ ID No. 1) in Paper No. 6 is acknowledged. The traversal is on the ground(s) that Group I and now Group III could be examined together with the claims of Group I without undue burden. This is found unpersuasive for the reasons stated in paper no. 5, mailed 7/23/02. Applicant also states that claim 8 is a method of making the polypeptide. Rejoinder will be considered upon allowance of the polypeptide claim. Applicant is advised that there may be obviousness-type double patenting rejection upon re-joinder.

Applicant argues that the polynucleotides should be re-joined because they have already been examined. These claims are patentable distinct from the polypeptide claims and there are differences between the polynucleotides in the instant application and the patent.

Claims 1-6, 8-18 and 44-46 are pending.

Claims 3-6, 8-14, 18 and 44-46 are drawn to non-elected inventions and are withdrawn from examination.

Claims 1-2 and 15-17 are examined on the merits.

Claim Rejections - 35 USC § 112

Claims 1, 15 and 17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 is broadly drawn to "a naturally-occurring amino acid sequence having at least 90% sequence identity to the sequence of SEQ. ID. NO: 1" and biologically-active and immunogenic fragments. Claim 1 is broadly drawn to a polypeptide comprising an amino acid sequence selected from a naturally-occurring amino acid sequence having at least 90% sequence identity to the sequence of SEQ ID NO: 1, biologically-active fragment of the amino acid sequence of SEQ ID NO: 1 and an immunogenic fragment of the amino acid sequence of SEQ ID NO: 1.

While the amino acid sequence of SEQ ID NO:1 is adequately described in the specification as-filed, thereby providing an adequate basis for the polypeptide of SEQ ID NO:1; there is insufficient written description as to the identity of a polypeptide having at least 90-99% sequence identity to SEQ ID NO:1 that would still maintain the function of the polypeptide. Consequently, the specification does not provide an adequate written description of a polypeptide having at least 90-99% sequence identity to SEQ ID NO:1.

The specification as filed does not provide adequate written description support for an antibody to a polypeptide having at least 90-99% sequence identity to SEQ ID NO:1. Polypeptides having diverse functions are encompassed by the phrase 90-99% identity. Thus a broad genus having potentially highly diverse functions is encompassed by the phrase 90-99% sequence identity" and conception cannot be achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method. For example, Skolnick et al. (Trends in Biotech., 18(1):34-39, 2000) teach that the skilled artisan is well aware that assigning functional activities for any particular protein or protein family based upon sequence homology is inaccurate, in part because of the multifunctional nature of proteins (e.g., "Abstract" and "Sequence-based approaches to function prediction", page 34). Even in situations where there is some confidence of a similar overall structure between two proteins, only experimental research can confirm the artisan's best guess as to the function of the structurally related protein (see in particular "Abstract" and Box 2). Adequate written description requires more than a mere statement that it is part of the invention. The sequence itself

is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016.

With respect to fragments, there is not guidance as to which portion of the polypeptide is functional or what function the fragment is supposed to possess. In view of many fragments that are encompassed by the claims and in view of the lack of any guidance as to what is "functional", applicant has not shown possession of "fragments".

Therefore, only SEQ ID No. 1 meets the written description provision of 35 U.S.C. 112, first paragraph. Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the written description inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.). Consequently, Applicant was not in possession of the instant claimed invention. See University of California v. Eli Lilly and Co. 43 USPQ2d 1398.

Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one

skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described in In Re Colianni, 195 USPQ 150 (CCPA 1977) and have been adopted by the Board of Patent Appeals and Interferences in Ex Parte Forman, 230 USPQ 546 (BPAI 1986). Among these factors are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the breath of the claims,
5. the amount of direction or guidance present, and
6. the presence or absence of working examples.

The following is an analysis of these factors in relationship to this application.

Nature of the invention

Applicant discloses and claims the use of SEQ Id No. to treat any disease or condition associated with decreased expression of HTAP (SEQ ID No. 1), fragments thereof or polypeptides having 90% identity to SEQ ID NO. 1.

State of the Art

However, the state of the art does not recognize that the claimed peptides or analogous peptides can treat any such conditions.

Predictability

Applicant states that SEQ ID No. 1 has similarity to BUP. However, the there is no objective evidence to show that BUP can treat such disorders or even that BUP is

involved in such disorders. Even if there were in vitro data linked BUP or SEQ ID no. 1 to cell proliferation or inflammation, the claims are directed to in vivo treatments and such treatments, in and of themselves, are unpredictable because pharmacokinetic factors such as the stability of the peptides in the body, half-life, absorption efficiency, binding affinity for target cells, biotransformation, and the rate of clearance from the body are important consideration for the efficacy of the claimed subject matter and yet have not been considered. In the absence of these considerations, there is no assurance (ie. it is unpredictable) that the active polypeptide would be available in effective doses at the target sites and for periods of time sufficient to effect the required cellular or biological responses.

Guidance/Working Examples

There is no objective evidence to show that Seq ID No. 1 or BUP are involved in the treatment of the claimed disorders.

In view of the above, it is the Examiner's position that one skilled in the art could not make and/or use the invention without undue experimentation.

Claims 1 and 15 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 15 and 17 are vague and indefinite in the recitation "biologically-active fragment". It is not clear what activities are bestowed upon these designated fragments described by this term.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-2 and 15-17 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and a substantial asserted utility or a well established utility.

Applicants have asserted several utilities for the claimed polypeptides and fragments thereof. The specification asserts the following utilities for the claimed antibodies: compositions for the diagnosis, prevention or treatment of cell proliferation and inflammation. However, these asserted utilities are not credible, specific or substantial for the broadly claimed polypeptide. Other that the sequence identification number, the specification provides no functional characterization of SEQ ID NO: 1, no specific tissue distribution of the polypeptide and no specific disease state in which these proteins affect. The broadly claimed polypeptides have similarity to BUP (page 2 of specification). However, the prior art does not show that BUP in involved in the diagnosis, prevention or treatment of cell proliferation or inflammation. Consequently, there is no information that links expression of the claimed polypeptide to **any specific**

tissue or disorder. Thus, the asserted utility of the claimed antibodies is not substantial, specific or credible.

Claims 1-2 and 15-17 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela J Huff whose telephone number is 703-305-7866. The examiner can normally be reached on T,Th 6am-12pm and alternate Mondays 6am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa can be reached on 703-308-3995. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

Sheela J Huff
Primary Examiner
Art Unit 1642